6:Huntingford E-5 (1938-1939) 1953 FL6 Dorobo FL6

described as *cwaaswaaswaut*, i. e. narrow-waisted; she is bigger than the others, with a large head and body and no sting. The workers, called simply *sokowik*, "bees", are considered to be males[8], and the Dorobo say that all the male bees in a swarm fertilize the queen. The queen lives inside the swarm surrounded by the bees, and never goes outside it, being fed by the workers with the honey they make, and she lays her eggs in the fresh combs before any honey has been deposited in them. The workers make honey, according to the Dorobo, by eating the 'water' (*pek*) of the flowers, which they vomit into the empty combs when they return to the swarm[9]. A comb is made (or built, *ter mpoisiet* — build the comb) by the mouths of the bees with the help of another substance which they get also from flowers; and from the same source they get wax (*lomwoiet*) which they bring in on their feet, and use to close up openings in the hive[10]. This is what the Dorobo say. The drone, on the other hand is considered to be a female which does no work and has no sting. The drones just fly about "playing", and as far as the Dorobo can see perform no useful work. They just eat up the honey and after a time the workers kill them, *kotil kakit*, "they cut their necks", so that they shall not eat the whole supply of honey[11]. Terms used to describe bees are:

Kemet — queen (lit. mother).
Sokowik — workers (sing. *sokowiat*).
Kapuswik — drones (sing. *kapuswiat*).
Uswik — young bees, grubs (sing. *uswuet*).
Okdoiyet — swarm.
Mpokiet, *Wawoiet* — Empty comb, either new and unused, or old.
Kipiroitiat — comb full of honey.

The Dorobo seem to have no idea of the length of a bee's life, which in Europe may amount to some seven months in the case of bees born in the autumn.

231 [422] [426] Honey-barrels or hives, *pesuet*, are made of slats or of hollowed-out logs and placed in trees for the bees to swarm in. Once a swarm has entered it is considered to belong to the owner of the barrel. If it stays for a long time (the Dorobo say) it may be inherited by the owner's son; but if it should go from one man's barrel into another's, nothing is done, for though the Dorobo say that their bees get to know them, they do not claim to be able to control their movements. And if a swarm deserts a barrel, the owner just [423] waits till another swarm comes to it. The commoner type of honey-barrel is

[8] The workers are really females whose ovaries have become modified so that they do not normally produce eggs.

[9] This is not very far short of the truth, for bees take into their crops a substance called nectar from the flowers and deposit it in the cells. By the action of their saliva, which produces a chemical change, the nectar becomes honey, and is regurgitated into the cells for storage or for feeding the grubs. (Cf. article *Bee* in the Encyclopaedia Britannica, ed. 14, by Prof. C. H. Cheshire.)

[10] Wax is really secreted by special cells in the abdomen of the worker bees.

[11] Drones are in reality the males which mate with the queen. When the mating season is over and food is getting scarce they are killed and thrown out by the workers.

/234 cont./

231 322 [412] the first consists of the ax blade stuck into a wooden handle like a knife and is used as a paring chisel; the other is a hollow chisel (nja) with which one smooths the tubes on the inside. The two openings are closed corklike by flat wooden covers fitting into the opening, into each of which two holes permit entry for the wild bees. For hanging, one puts around the middle part two loops twisted out of lianas, which are connected, handlelike, by a plaiting of lianas, like the straps of a holdall. The beehive is picked up by this handle with a hooked branch, at the upper end of which is lashed a second one with a hook on top. With the latter the whole thing is hung in the branches of taller trees. On the side hanging downward the beehive bears an ownership mark. As a rule it is the same as the one that is burned on the long tang or on the extension tang of the arrow point. On the beehive one finds it either whole or only its lower part. Before the honey is removed /235/ the bees are driven out by a very smoky fire kindled under the tree (1).

231 [283]

Fig. 81. (1/6)

[422]

[711] 1. I never observed among the El dorobo a stupefying of the bees by means of Bovista (Lycoperdon), such as I saw on Kilimandscharo among the Wadschagga.

/345 cont./

411
[439]

rarely also make themselves, as a rule has the so-called arrow shape. It bears either a short, flat tang, which is lengthened by insertion into a cylindrical one ten centimeters long, or else the latter and the point are worked continuously out of one piece. Now an and then one also finds arrows among which the extension tang is made out of wood. These come from Ukamba, where the Wandorobo, who call them mijeki, have bought them. The tang is stuck loosely in the arrow shaft so that the latter can fall off when the animal has been hit. Less frequently they use wooden throwing-spears (Fig. 88) with a loosely inserted, poisoned iron point, which, like the arrow point, remains sticking in the animal hit, while the wooden shaft falls off. They also attack the sleeping rhinoceros and hippopotamus with a sharp sword, which they tie on a stick and use as a thrusting or throwing spear. One leaves this weapon sticking in the wound so that, if the animal flees, it cuts the entrails still more by sticking on the ground and against the bushes. Both types of spear are called mwariki. Both the point and tang of arrows and throwing spears bear a filed-in ownership mark (Plates 5 and 6), by which one can recognize tribe and lineage of the owner, in order, upon finding a slain head of game, to determine its hunter. Like the ownership marks on the cattle and donkeys of the Masai, the symbols here are not the same for all Wandorobo, but vary more or less in the individual

Fig. 87. (1/10)

[434]

[424]

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[424]

Fig. 88. (1/10)

16 Marker--285 G-6 (1856-ca.1910) 1910 PLIS Wood
Darwin PLS
444

/340 cont./

422 districts. Besides such exotic use also finds /340/ others that belong to individual large families and are then used in place of the former, not together with them. The point and tang of the arrows and throwing spears are always smeared along their entire length with a plant poison, which the Wandorobbo themselves have out of the wood and roots of the Acocanthera abyssinica, which they call ouba, i.e., poison (1).

000 1. Prof. Dr. L. Lewin, Berlin, produced a glycoside, amorphous ouabain, from Acocanthera wood that the author sent to him, which shows the following characteristics: it tastes bitter and is copiously soluble in cold water; Drehung /rotation/ $[\alpha]_D$ ca. $-$ 38° for a 2 per cent cold dilute solution; it expands at 184°C; it has the per cent composition C_{30} H_{48} O_{12}; it is precipitated by excess of caustic dissolved in concentrated sulphuric acid, it gives a quickly arising and strong fluorescence in green. -- Prof. Dr. E. Fraenkelmann, Berlin, clinically tested ouabain for serious heart ailments and expressed himself, among other things, about the results as follows: "Ouabain is easily soluble and I took advantage of this circumstance to inject it subcutaneously or intravenously. Injected subcutaneously or intravenously in a concentration of 0.3-0.4 mg. of ouabain three times daily in the above concentration, I have so far obtained in the case put among my heart patients a very prompt, excellent result in the direction of digitalis, without unpleasant side effects. If the experiences up to now continue to be equally favorable -- and I have no reason to doubt it -- there would